

REMARKS

Claims 1-7 are pending in the above-referenced application and stand rejected pursuant to one or more of 35 U.S.C §102, 35 U.S.C. §103 and 35 U.S.C. §112. Also, the instant office action includes an objection to the drawings of the application.

Applicants respectfully request entry of this amendment and response pursuant to 37 C.F.R. §1.116 because it places the subject application in condition for allowance or in better form for consideration on appeal. Moreover, Applicants respectfully submit that this amendment and response could not have been earlier presented because it addresses the Examiner's comments regarding arguments that were presented in Applicants' June 20, 2003 response to the March 20, 2003 office action.

The Drawings Objection

At Paragraph #1 of page 2 of the office action, the Examiner indicates that "the proposed drawing correction and/or the proposed substitute sheets of drawings, filed on June 20, 2003 have been approved. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance." Later, at Paragraph #23 of page 5 of the office action, the Examiner indicates that "the objection to the drawings presented in the office action mailed March 20, 2003 is withdrawn in light of the proposed drawing correction." Applicants submit that these two portions of the office action are contradictory.

Corrected drawings *were* sent with Applicants' June 20, 2003 response to the March 20, 2003 office action. Applicants' undersigned representative telephoned the Examiner to discuss this objection; however, the Examiner did not have the file at that time and thus could not verify whether he received corrected drawings. During the call, the Examiner indicated that the drawing objection in the current office action is likely improper, and that if the drawing objection is, in fact, proper, Applicants would have an opportunity to overcome the objection at a later time.

Applicants submit that the remarks above are responsive to the pending drawings objection.

The §112 Rejection

Claim 2 is rejected pursuant to 35 U.S.C. §112, first paragraph for allegedly failing to comply with the written description requirement. Specifically, the Examiner alleges that the language "at least a periphery of the backing plate" of claim 2 does not appear to be supported in the specification of the application, as filed, and that, therefore, the language is considered new matter and must be cancelled. Applicants respectfully traverse this rejection.

Applicants refer the Examiner to page 25, lines 17-25 of the application, which provides support for claim 2 by stating ". . . it is possible to cool the portion in the vicinity of four sides of the target 10, namely, the peripheral portion of the target 10. Consequently, the peripheral portion of the target 10 . . . can be cooled effectively . . . "

Wherein support for claim 2 is provided in the specification of the subject application, as filed, Applicants respectfully request that the Examiner withdraw the rejection of claim 2 pursuant to 35 U.S.C. §112, first paragraph.

The Prior Art Rejections

Claims 1-6 are rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,199,259 to Demaray et al. ("the Demaray patent") in view of U.S. Patent No. 6,143,149 to Abe ("the Abe patent"). Claims 1, 2 and 7 are rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over the Abe patent in view of U.S. Patent No. 5,985,115 to Hartsough et al. ("the Hartsough patent").

Applicants traverse these rejections, which Applicants submit are either overcome or demonstrated to be inappropriate in view of at least the amendments set forth above and/or the remarks that follow.

As amended, claim 1 of the application (from which claims 2-6 depend) recites, in part, a backing plate to which a substantially rectangularly shaped target is bonded, wherein there is a substantially uniform temperature distribution within the target and wherein cooling medium is fed to at least one corner of the backing plate and to at least a portion of the periphery of the backing plate such that a different level of cooling is achieved at the at least one corner than at the at least a portion of the periphery. The substantially uniform temperature distribution beneficially results in formation of a thin film having substantially uniform film thickness.

Similar to claim 1, claim 7, as amended, recites a sputtering method for forming a thin film on a substrate using a target, wherein the method comprises, in part, the step of cooling the target via a cooling means that includes at least one cooling medium flow passage for feeding a cooling medium to at least one corner of a backing plate and to at least a portion of the periphery of the backing plate such that a different level of cooling is achieved at the at least one corner than at the at least a portion of the periphery.

Applicants note, for the record, that the amendments to claims 1, 2, 5 and 7 are being made solely to expedite allowance of this application. By amending these claims, Applicants do not acquiesce to their rejection(s), or to the reasons offered by the Examiner in support of their rejection(s). Also, by amending these claims, Applicants do not dedicate the subject matter of these claims - as originally filed or as previously amended - to the public. Moreover, Applicants reserve the right to seek patent protection for one or more claims that are similar or identical to these claims - as originally filed or as previously amended - in one or more related applications.

Regarding the cited references, neither the Demaray patent, nor the Abe patent, nor the Hartsough patent (nor any combination) discloses or suggests the arrangement of claims 1-6, nor the method of claim 7. In particular, none of these references (nor any combination) discloses or suggests an arrangement or method whereby cooling medium is fed to at least one corner of the backing plate and to at least a portion of the periphery of the backing plate *such that a different level of cooling is achieved at the at least one corner than at the at least a portion of the periphery.*

For at least this reason, claims 1-6 and 7 are believed to be patentable over the cited references, as well as any combination thereof.

Moreover, regarding claim 1-6, they recite that the target is substantially rectangularly shaped. None of the cited references discloses a target with a substantially rectangular shape. Instead, the Abe patent merely discloses a circular target divided into wedge-shaped pieces, and the Hartsough patent describes a circular target. And although the Examiner contends that Figure 10 of the Demaray patent discloses a rectangular-shaped target, Applicants submit that the Demaray target is more accurately characterized as *octagonally*-shaped.

Regarding the Abe patent, Applicants reiterate that it discloses partitioning target materials into a plurality of segments, and forming films under "different conditions" that result in "films of different thickness" (see, e.g., column 4, lines 20-23 of the Abe patent). This is accomplished through the use of shield plates, which are disposed between electrodes and a substrate, and which separate adjacent electrodes from each other in order to *prevent* a film from being formed under similar conditions in the separated plurality of segments.

To address the Examiner's contentions at Paragraphs #9 and #19 [sic] at page 3 of the July 15, 2003 office action, Applicants note that the Abe patent describes that "it is possible to easily control the film formation by cutting the electric conduction or suspending the electric conduction in progress to the divided electrode corresponding

to such a region" (emphasis added), but the Abe patent *does not* appear to be concerned with, let alone refer to better control of the properties of the sputtering film.

Moreover, with respect to Paragraph #30 at page 6 of the July 15, 2003 office action, the Abe patent describes that "there is a region in which it is unnecessary to form a film or it is unnecessary to form a film exceeding a constant thickness" (emphasis added), but it *does not describe* control of regions requiring a constant thickness film formation, as recited in claims 1-6 and 7.

In essence, unlike the present invention, which achieves substantially uniform film thickness by controlling film formation properties, the cited Abe patent is not directed to - nor does it appear to achieve - any control of film formation properties. In other words, not only does the Abe patent neither disclose nor suggest the backing plate of claim 1-6 and the sputtering method of claim 7, but it appears to *teach away* from the present invention in that its goals/purposes are to form films of different thickness or under different conditions, whereas the goal of the present invention is control film formation properties so as to form thin films having "substantially uniform film thickness." And has long been held by the Court of Appeals for the Federal Circuit, teaching away from a claimed invention is the antithesis of suggesting that invention, and, therefore, the requisite suggestion, motivation, or incentive to produce the claimed invention cannot be provided by a reference that teaches away from the claimed invention. See, e.g., *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988).



Therefore, because the Abe patent has been improperly applied in support of all of the pending rejections of claims 1-7 pursuant to 35 U.S.C. §103(a), such rejections must be withdrawn.

In view of at least the amendments and/or remarks above, all outstanding objections and rejections either have been overcome or demonstrated to be inappropriate. Therefore, the present application is believed to be in condition for allowance, and reconsideration and allowance thereof are respectfully requested.

If the undersigned can be of any assistance in advancing the prosecution of this case, the Examiner is invited to contact him through the information given below.

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Respectfully submitted,

By: 

Richard J. Roos, Reg. No. 45,053
EDWARDS & ANGELL, LLP
P.O. Box 9169
Boston, MA 02209
Tel: 617-439-4444
Fax: 617-439-4170
Email rroos@ealaw.com